

**Work Order ID 60610**

Thursday, July 15, 2010 10:24:50 AM



Page 1

Item ID: D206-642-541

Accept



Setup Start



Revision ID:

Stop



Item Name: Replacement Skidtube

Start Date: 7/15/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 7/22/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date: 10-7-15

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start



Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

Draw Nbr

Revision Nbr

D3274

D

IIN-D206-642

Rev M

100

0.00



DC

DOCUMENT CONTROL

Memo

0.00

Document Control

Photocopy bluefile &amp; type labels per PPP D206-642-541 CHG003

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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**NOTE:** Date & initial all entries

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Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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110

0.00



Skidtubes

Skidtubes

Skidtubes

Memo

0.00

\*\*\*\*VERIFY AND INSPECT THE MATERIAL PRIOR TO USE\*\*\*\*

1- Bend FWD end of tube using bend prog D3274 FWD and foilo 10 as per dwg D3274, cut fwd end of tube with saw table setup D3274.

2- remove fwd indexing ridge as per dwg D3274. Prepare for welding

3- weld fwd cap as per dwg D3274 and QSI004

AR Aluminum Rod Batch: M112507/M114242

4- grind fwd cap weld on top surface only

5- Cut AFT end of tube at 170.9" as per dwg D3274 and deburr end.

6-Drill Aft cap pilot hole using DT8025

7 -Cleco DT8025 in position and install pilot hole drill Jig DT8742A,B,C,D. Drill 3/16" pilot holes as per Dwg D3274

8 -Remove inner indexing ridge on aft end of skidtube as per Dwg D3274 scribe batch #

9 -Open aft end cap holes to Ø0.208" as per Dwg D3274. Deburr aft end.

DP 10-7-20

BE 10/07/20

M 10/7/21

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Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120  HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1  Memo	0.00  0.00				1	11	10/7/21	
130  QC Quality Control	QC3- Inspect Part Finish  Memo	0.00  0.00							
140  QC Quality Control	QC5- Inspect part completeness to step on W/O  Memo	0.00  0.00							

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Run Start

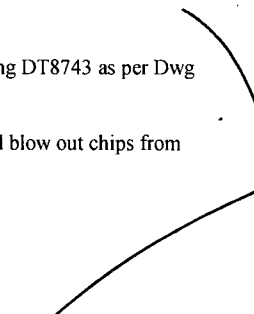


QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150 	Skidtubes	0.00							
Skidtubes	<b>Memo</b> 1-Open Ø0.313" and 0.375" crossbolt spacer holes using DT8743 as per Dwg D3274  2-Deburr crossbolt spacer holes as per Dwg D3274 and blow out chips from inside the tube  3-Bond web in place as per Dwg D3274 & QSI 015. A/R <input type="checkbox"/> Sikaflex-291 <input checked="" type="checkbox"/> M115114 <input type="checkbox"/> Sikaflex expire date: <input type="checkbox"/> 11-1-30 <input type="checkbox"/> Start: <input type="checkbox"/> 10-7-21 <input type="checkbox"/> Time: <input type="checkbox"/> 3PM <input type="checkbox"/> Finish: <input type="checkbox"/> 10-7-22 <input type="checkbox"/> Time: <input type="checkbox"/> 5:30AM (Adhere for 12 hours)	0.00							
160 	QC5- Inspect part completeness to step on W/O	0.00							
QC Quality Control	<b>Memo</b>	0.00							

  
10-7-21

8.06/122

W/O:		WORK ORDER CHANGES					
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QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170  Skidtubes	Skidtubes	0.00							
Skidtubes	<b>Memo</b> 1-Bend AFT end of tube using bend prog. D3274 AFT as per dwg D3274. Install drop pins in crossbolt spacer holes to maintain web position.  2- DRILL PILOT HOLES FOR WEARPLATES USING D3274-1T2 OPEN HOLES TO .297" . Debur  3-DRILL TOE PIN HOLE .640" DIA AS PER DWG USING DT8935 FWD END OF TUBE DEBURR INSIDE OF HOLE AS NECESSARY (DO NOT ENLARGE HOLES) REMOVE ANY FOREIGN OBJECTS INSIDE OF TUBES  4- Countersink crossbolt spacer holes as per Dwg D3274  5- prepare for welding	0.00							
180  QC	QC5- Inspect part completeness to step on W/O	0.00							
Quality Control	<b>Memo</b>	0.00							

h2 3.004

L 24.96

S 10/17/26

10-7-26

XO

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190  Skidtubes	Skidtubes	0.00							
Skidtubes	<b>Memo</b> 1-Insert D2649 & D3275-1 crossbolt spacers. Weld as per QSI 004 and Dwg D3274. Remember to back drill each hole before welding the other side. Use aluminum rod A/R <input type="checkbox"/> Aluminum Rod <input checked="" type="checkbox"/> <u>M112507</u> <i>BE 10/07/27</i> 3-Grind cross bolt welds flush as per Dwg D3274. <i>10-7-28</i> 4-Counterbore 5/16" x 0.750" deep as per Dwg D3274 and deburr.	0.00							
200  QC	QC5- Inspect part completeness to step on W/O	0.00							
Quality Control	<b>Memo</b> <i>Sid 10/7/08</i>	0.00							<i>10</i>

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

210

QC10- Inspect visual per QSI004- ground welds

0.00



QC

Memo

0.00

Quality Control

220

Pressure Wash per QSI005 4.3

0.00



HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch

230

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

Memo

0.00

Powder Coating

START TIME: 8:50  
OVEN TEMPERATURE: 320°  
FINISH TIME: 9:20

1 Bl 10-739.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

240



QC

Quality Control

QC3- Inspect Part Finish

Memo

0.00 =&gt; M 10/03/13

0.00

1 0

250



HandFinish

Hand Finishing

HandFinishing

Memo

1-Install Nut Plate as per Dwg D3274. Apply LPS-3 to Nut Plate and rivets.  
A/R ☐ N/A ☐ LPS-3 ☐ M1042512-Install inserts as per Dwg D3274. Use a drop of Sikaflex inside insert holes a  
A/R ☐ ☐ Sikaflex-291 ☐ 11/11/14  
Sikaflex expire date: ☐ 1/10/1

0.00 =&gt; M 10/03/13

0.00

1 0

260



QC

Quality Control

QC5- Inspect part completeness to step on W/O

Memo

Inspect Nut Plate &amp; Inserts

0.00 Sika/13

0.00

0

W/O:		WORK ORDER CHANGES					
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QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

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270

0.00



HAND FINISHING RESOURCE #1

=> M 10/08/16

X1 0

HandFinish

Memo

0.00

Hand Finishing

1-Install wearpads & gaskets as per Dwg D3274.

2-Install ring as per Dwg D3274

A/R ☐ Sikaflex-291 ☐ M115114 ☐

Sikaflex expire date: ☐ 11/01

3-Inspect for foreign objects as per QSI 024

4-Spray inside of tube on both sides of web with LPS-3

A/R LPS-3 Batch: N/A

5-Install Aft Cap and seal with Sikaflex. Clean excess adhesive.

A/R ☐ Sikaflex-291 ☐ M115114 ☐

Sikaflex expire date: ☐ 11/01

280

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

8/08/16



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Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

290

Identify as per dwg &amp; Stock Location: \_\_\_\_\_

0.00



Packaging

Memo

0.00

Packaging

300

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

10/08/19  
CZ10/8/19

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# Picklist Print

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Work Order ID: 60610



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 7/15/2010

Required Date: 7/22/2010

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:B 05.09.23 Revised per D206-642 Rev. J KJ/JLM  
 IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM  
 IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
 IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC  
 IPP Rev:F 08-06-02 add comment DD verified by:EC  
 IPP Rev:G 08-10-09 revise details DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2600-1-190  Extrusion Round 3" 206		Manufactured	No			110	Each	32.0000	1	1			
<div> <div>Location</div> <div>Loc Qty</div> <div>Loc Code</div> </div> <div> <div>LG</div> <div>47575</div> <div>32</div> </div> <div> <div>32</div> <div></div> <div></div> </div>													
D3285-1  Cap		Manufactured	No			110	Each	149.0000	1	1			
<div> <div>Location</div> <div>Loc Qty</div> <div>Loc Code</div> </div> <div> <div>LG</div> <div>52511</div> <div>74</div> </div> <div> <div>52647</div> <div>75</div> <div></div> </div>													
D3282-041  Float Web (206L/407)		Manufactured	No			150	Each	9.0000	1	1			
<div> <div>Location</div> <div>Loc Qty</div> <div>Loc Code</div> </div> <div> <div>LG</div> <div>59886</div> <div>9</div> </div> <div> <div>9</div> <div></div> <div></div> </div>													

*DP* 10-7-20

*BE* 10/6/20

*DP* 10-7-21

W/O:		WORK ORDER CHANGES					
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Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 7/15/2010

Required Date: 7/22/2010

Start Qty: 1.00

Required Qty: 1.00

D2649

Manufactured No

190

Each

69.0000

1

1



Cross Bolt Spacer

Location

Loc Qty

Loc Code

LG

69

58545

69

B 60652

BE 10/07/27

D3275-1

Manufactured No

190

Each

17.0000

12

12



Crossbolt Spacer

Location

Loc Qty

Loc Code

LG

17

53453

8

57513

9

B 60653

BE 10/07/27

CR3212-4-03

Purchased No

250

Each

3,739.000

2

2



Cherry Rivet

Location

Loc Qty

Loc Code

ST311

3739

111359

5

112314

30

114436

1142

14450

564

114859

1998

x2 M 10/08/13

D3415-041

Manufactured No

250

Each

61.0000

1

1



Nut Plate

Location

Loc Qty

Loc Code

ST056

61

33842

61

x1 M 10/08/13

Thursday, July 15, 2010 10:24:54 AM

Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

Thursday, July 15, 2010 10:24:54 AM

Page 3

Work Order ID: 60610

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 7/15/2010

Required Date: 7/22/2010

Start Qty: 1.00

Required Qty: 1.00

CCR264SS3-3

Purchased

No

250

Each

540.0000

2

2



Cherry Rivet

Location

Loc Qty

Loc Code

ST311

540

112314

4

113539

60

113973

476

ALS4-1032-130

Purchased

No

250

Each

4,506.000

78

78



Insert

Location

Loc Qty

Loc Code

PKG11

4190

114723

4190

ST282

277

110511

38

114407

239

ST381

39

114654

39

D3536-15

Manufactured

No

270

Each

13.0000

1

1



Gasket

Location

Loc Qty

Loc Code

FP

6

56055

6

FP11

7

59238

7

Thursday, July 15, 2010 10:24:54 AM

Shop Packet Print

Page 3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Thursday, July 15, 2010 10:24:54 AM

Page 4

Work Order ID: 60610

Parent Item: D206-642-541











Parent Item Name: Replacement Skidtube

Start Date: 7/15/2010

Required Date: 7/22/2010

Start Qty: 1.00

Required Qty: 1.00

D3536-23	Manufactured	No	270	Each	6.0000	1	1
							
Gasket							
<hr/>							
			<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>		
			FP011	6			
			58819	6			
D3536-35	Manufactured	No	270	Each	11.0000	1	1
							
Gasket							
<hr/>							
			<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>		
			FP012	11			
			58683	11			
D3536-39	Manufactured	No	270	Each	21.0000	1	1
							
Gasket							
<hr/>							
			<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>		
			FP12	21			
			58215	7			
			58571	14			
D3535-15	Manufactured	No	270	Each	10.0000	1	1
							
Wearshoe							
<hr/>							
			<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>		
			FP18	10			
			59236	10			
D3535-35	Manufactured	No	270	Each	7.0000	1	1
							
Wearshoe							
<hr/>							
			<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>		
			FP018	7			
			59237	7			

Thursday, July 15, 2010 10:24:54 AM

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Page 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Thursday, July 15, 2010 10:24:54 AM

Page 5

Work Order ID: 60610

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 7/15/2010

Required Date: 7/22/2010

Start Qty: 1.00

Required Qty: 1.00

D3535-39  
Wearshoe

Manufactured No

270

Each

8.0000

1

1

Location

Loc Qty

Loc Code

FP18

8

58214

8

270

Each

5.0000

1

1

x1 M 10108113

D3535-23  
Wearshoe

Manufactured No

Location

Loc Qty

Loc Code

FP21

5

57730

5

270

Each

20.0000

1

1

B60864

x1 M 10108113

D3537-3  
Wearpad

Manufactured No

Location

Loc Qty

Loc Code

FP17

4

57512

4

FP19

16

58711

16

270

Each

44.0000

9

9

x1 M 10108113

D3537-1  
Wearpad

Manufactured No

Location

Loc Qty

Loc Code

FP

1

55465

1

FP17

43

57713

3

59593

40

B60192

x9 M 10103113

Thursday, July 15, 2010 10:24:54 AM

Shop Packet Print

Page 5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Thursday, July 15, 2010 10:24:54 AM

Page 6

Work Order ID: 60610

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 7/15/2010

Required Date: 7/22/2010

Start Qty: 1.00

Required Qty: 1.00

AN960C10L NAS1149C0332 Purchased

No

270

Each

0.0000

80

80



washer

M115000



x80 all 10/03/13

AN960C416 NAS1149C0463 Purchased

R

No

270

Each

113.0000

1

1



washer



## Location

## Loc Qty

## Loc Code

ST346

113

00993

113

D3672-1 Manufactured

No

270

Each

1,033.000

2

2



Phenolic Washer



x1 all 10/03/13

## Location

## Loc Qty

## Loc Code

ST077

1033

51674

33

52505

1000

AN3C4A Purchased

No

270

Each

1,559.000

80

80



BOLT



x2 all 10/03/13

## Location

## Loc Qty

## Loc Code

ST350

1559

114103

501

114108

14

114416

12

114523

2

114859

30

114941

1000

x80 all 10/03/13

Thursday, July 15, 2010 10:24:54 AM

Shop Packet Print

Page 6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

Thursday, July 15, 2010 10:24:54 AM

Page 7

Work Order ID: 60610

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 7/15/2010

Required Date: 7/22/2010

Start Qty: 1.00

Required Qty: 1.00

AN4CSA

Purchased

No

270

Each

513.0000

1

1



BOLT

Location

Loc Qty

Loc Code

ST346

513

140552

13

112243

500

x1 10103113

D2646

Manufactured

No

270

Each

94.0000

1

1



Aft Cap

Location

Loc Qty

Loc Code

FP-4

85

57332

85

FP6

9

52663

9

x1 10103113

D3413-1

Manufactured

No

270

Each

31.0000

1

1



Ring

Location

Loc Qty

Loc Code

ST473

31

51586

1

53446

23

58524

7

x1 10103113

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**DART**

SHOP COPY  
RETURN TO  
ENGINEER  
UNCONTROLLED  
SUBJECT TO  
WITHOUT NOTICE  
WORK ORDER  
60610  
NO. 810-7-15

**RELEASED**

07.02.12

**DEO ATTACHED**

DESIGN CP	DRAWN BY PH	<b>DART AEROSPACE USA, INC.</b> PORT HADLOCK, WA	
CHECKED H	APPROVED H	DRAWING NO. D3274	REV. D SHEET 1 OF 4
DATE 06.12.19		TITLE SKIDTUBE ASSEMBLY	SCALE NTS
A	04.03.15	NEW ISSUE	
B	04.08.09	MOVE SADDLE HOLE: 42.14 WAS 42.76	
C	05.03.16	ADD -043; NEW INSERTS	
D	06.12.19	NEW INSERTS, SS WEARSHOE + GASKET	

Qty -041	Qty -043	Part Number	Description
X		D3274-041	SKIDTUBE ASSEMBLY
	X	D3274-043	SKIDTUBE ASSEMBLY
1	1	D2600-1-240	EXTRUSION
1	1	D2646	AFT CAP
12	12	D2649	CROSS BOLT SPACER
12	37	D3275-1	CROSS BOLT SPACER
1	1	D3282-041	FLOAT WEB
1	1	D3285-1	CAP
1	1	D3413-1	RING
1	1	D3415-041	NUT PLATE
1	1	D3535-15	WEARSHOE
1	1	D3535-23	WEARSHOE
1	1	D3535-35	WEARSHOE
1	1	D3535-39	WEARSHOE
1	1	D3536-15	GASKET
1	1	D3536-23	GASKET
1	1	D3536-35	GASKET
1	1	D3536-39	GASKET
9	9	D3537-1	WEARPAD
1	1	D3537-3	WEARPAD
78	78	ALS7-1032-130	INSERT (or AKS4-1032-130, ALS4-1032-130, AELS-1032-130)
80	80	AN3C4A	BOLT
1	1	AN4C5A	BOLT
1	1	AN960C416	WASHER
80	80	AN960C10L	WASHER
2	2	CCR264SS3-3	RIVET
2	2	CR3212-4-03	RIVET
2	2	NAS1515H3L	WASHER

**GENERAL NOTES:**

1. TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
2. DAMAGE TOLERANCE ON FWD BEND:  
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 7 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
3. ALL HOLES DRILLED ON CENTERLINES.
4. BOND D3282-041 FLOAT WEB INTO D3274-1/-3 OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/291 ADHESIVE PER DART QSI 015. ENSURE HOLES LINE-UP.
5. WELDING TO BE DONE PER DART QSI 004.
6. FINISH: - ACID ETCH, ALODINE ASSEMBLY PER DART QSI 005 4.1  
- POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
7. DRILL Ø0.297 HOLES FOR ALS7-1032-130 INSERTS USING DT3274-1T2 BEFORE FINISH. INSTALL ALS7-1032-130 INSERTS AFTER FINISH. SEAL WEARSHOE BOLTS WITH SIKAFLEX -241/-291.
8. SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

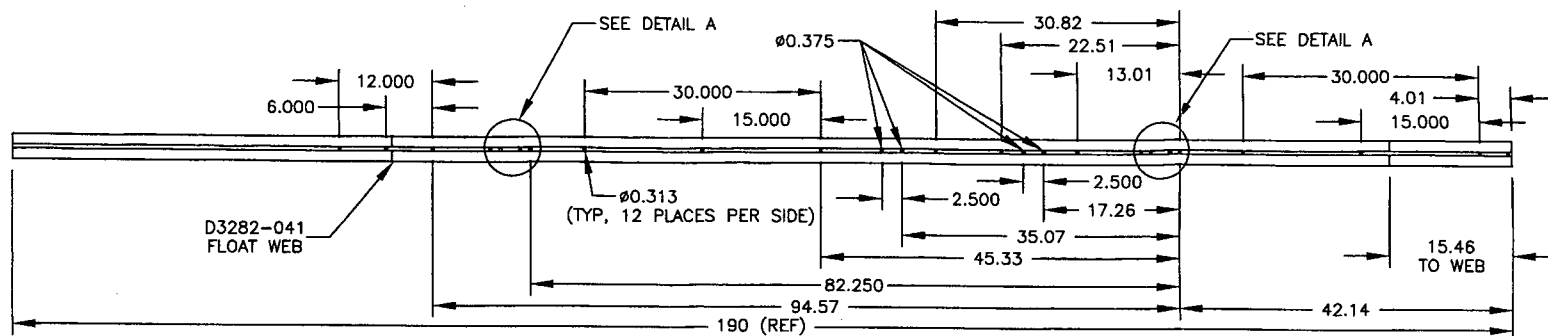
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

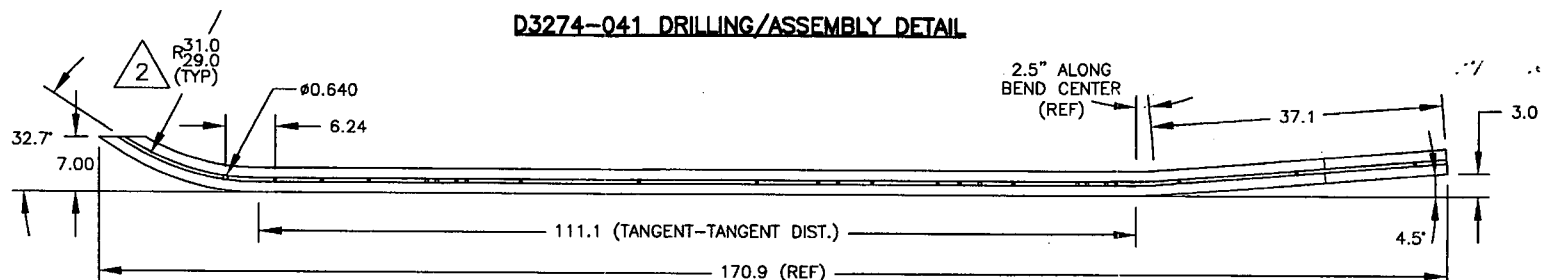
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

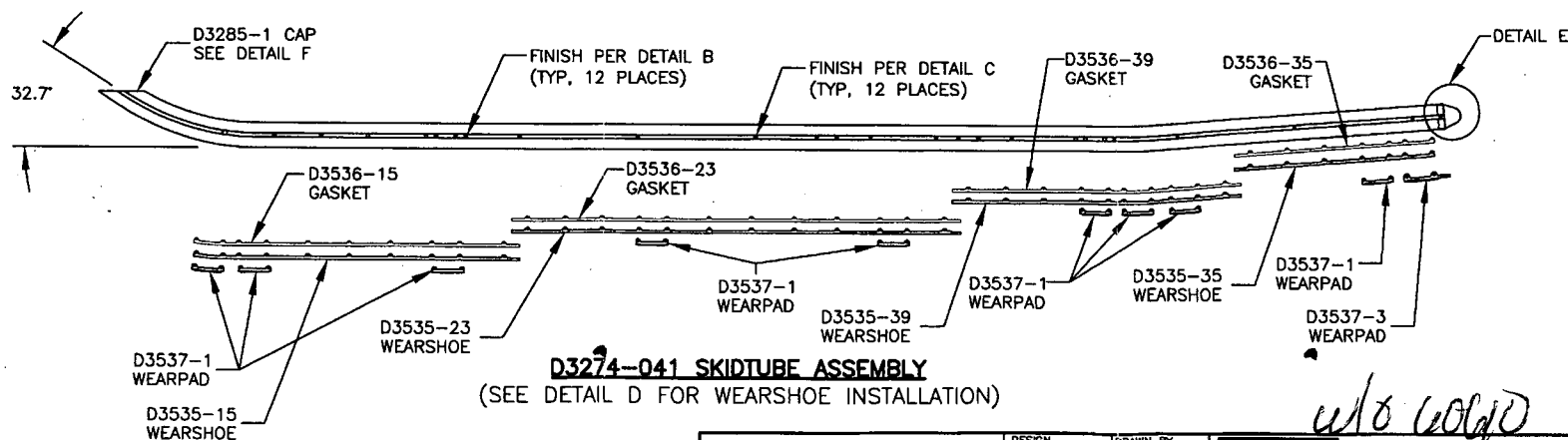
DEO ATTACHED



**D3274-041 DRILLING/ASSEMBLY DETAIL**



**D3274-041 BEND/DRILLING DETAIL**



**D3274-041 SKIDTUBE ASSEMBLY**  
(SEE DETAIL D FOR WEARSHOE INSTALLATION)

RELEASED

07.02.12

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DESIGN	CP	DRAWN BY	PH	<b>DART</b> DART AEROSPACE USA, INC. PORT HADLOCK, WA
CHECKED	#	APPROVED	#	DRAWING NO. D3274
DATE	06.12.19	TITLE	SKIDTUBE ASSEMBLY	REV. D SHEET 2 OF 4 SCALE 1:15

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

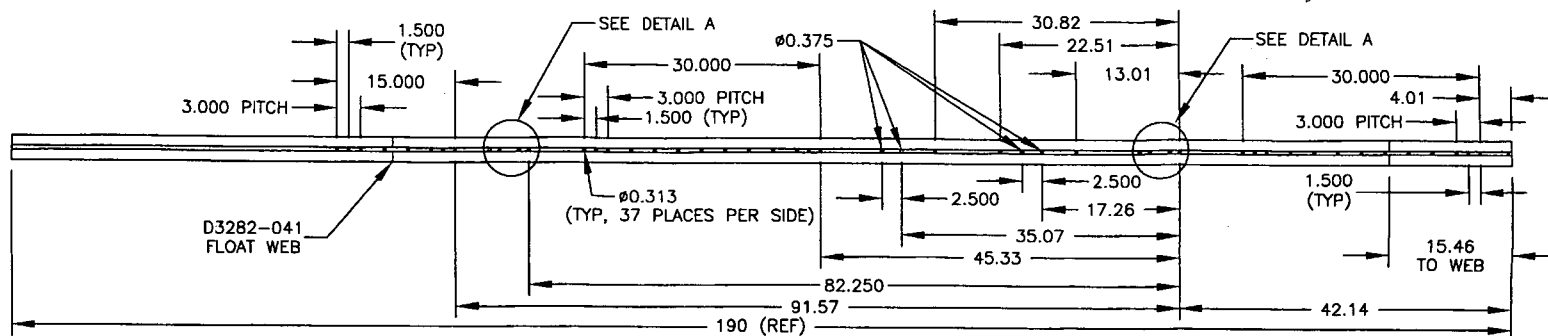
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

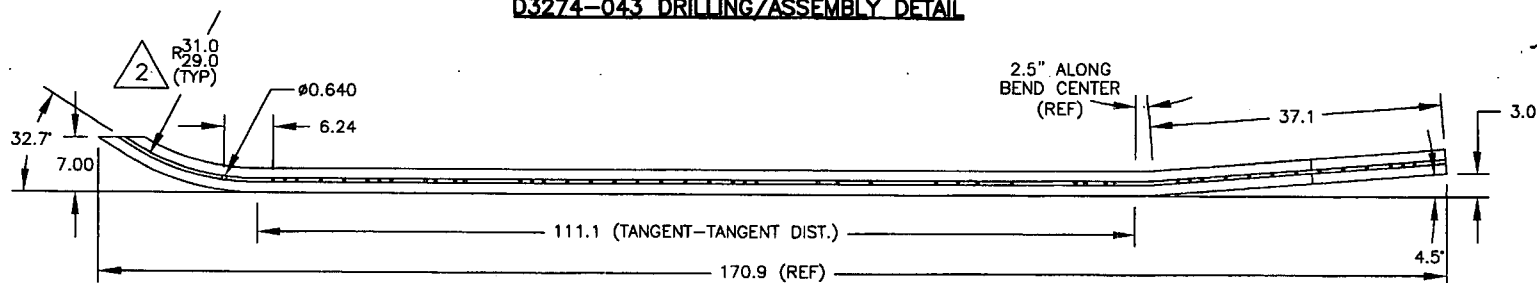
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

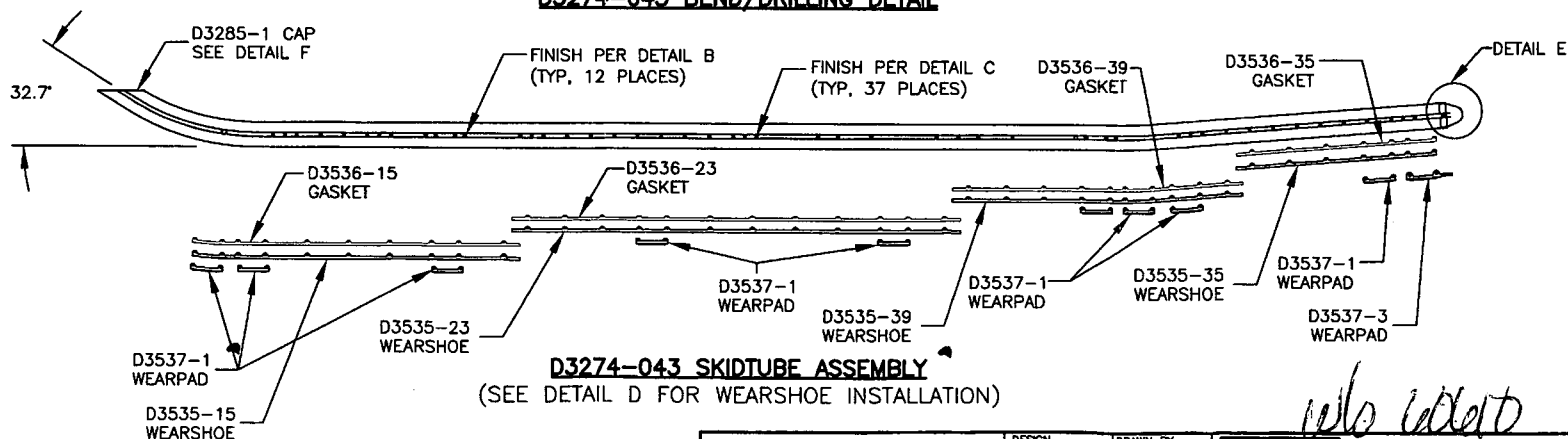
DEO ATTACHED



**D3274-043 DRILLING/ASSEMBLY DETAIL**



**D3274-043 BEND/DRILLING DETAIL**



**D3274-043 SKIDTUBE ASSEMBLY**  
(SEE DETAIL D FOR WEARSHOE INSTALLATION)

RELEASED

07.02.12

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DESIGN	CP	DRAWN BY	PH	<b>DART</b> DART AEROSPACE USA, INC. PORT HADLOCK, WA
CHECKED	#	APPROVED	#	DRAWING NO. D3274
DATE	06.12.19	TITLE	SKIDTUBE ASSEMBLY	REV. D SHEET 3 OF 4 SCALE 1:15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

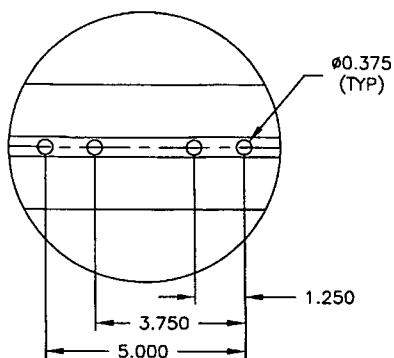
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

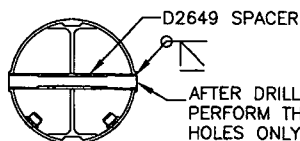
**NOTE:** Date & initial all entries



# **DETAIL A: DRILL DETAIL**

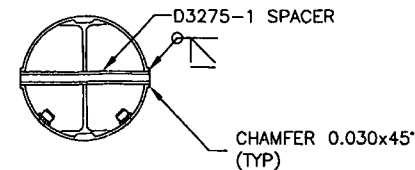


# **DETAIL B** FOR 0.375 HOLES ONLY

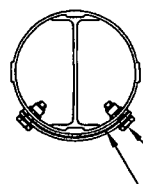


- AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR 0.375  
HOLES ONLY:
1. CHAMFER HOLE 0.030x45°
  2. INSERT D2649 SPACER
  3. WELD INTO PLACE AND GRIND FLUSH
  4. C'BORE TO 0.313x0.75 DEEP

# **DETAIL C** FOR 0.313 HOLES ONLY



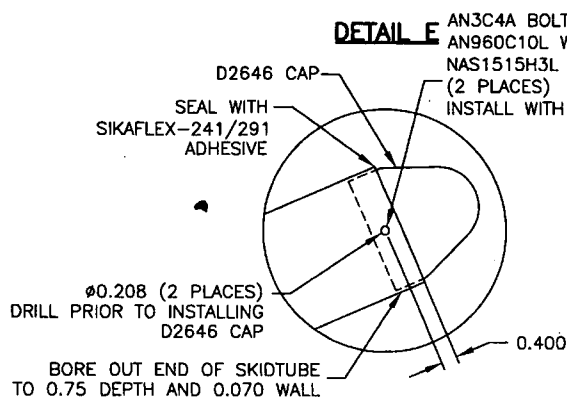
# **DETAIL D**



- AS7-1032-130 INSERT (1)  
AN3C4A BOLT (1)  
AN960C10L WASHER (1)  
(78 PLACES)

GASKET/WEARSHOE/WEARPAD (REF)

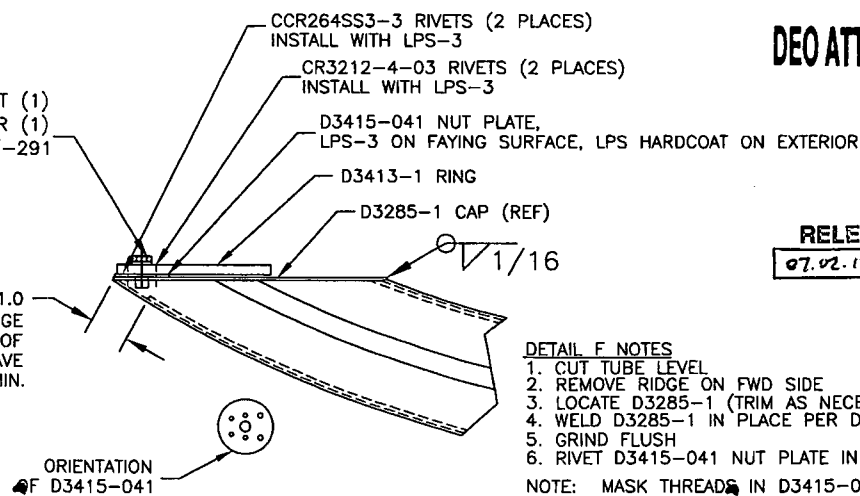
# **DETAIL E**



- AN4C5A BOLT (1)  
AN960C416 WASHER (1)  
INSTALL WITH SIKAFLEX-241/-291

REMOVE RIDGE  
ON INSIDE OF  
SKIDTUBE LEAVE  
0.070 MIN.

# **DETAIL F: END FINISHING DETAIL**



CCR264SS3-3 RIVETS (2 PLACES)  
INSTALL WITH LPS-3

CR3212-4-03 RIVETS (2 PLACES)  
INSTALL WITH LPS-3

D3415-041 NUT PLATE,  
LPS-3 ON FAYING SURFACE, LPS HARDCOAT ON EXTERIOR

D3413-1 RING

D3285-1 CAP (REF)

1/16

ORIENTATION  
OF D3415-041

**DEO ATTACHED**

**RELEASED**  
07.02.12

# **DETAIL F NOTES**

1. CUT TUBE LEVEL
2. REMOVE RIDGE ON FWD SIDE
3. LOCATE D3285-1 (TRIM AS NECESSARY)
4. WELD D3285-1 IN PLACE PER DART QSI 004
5. GRIND FLUSH
6. RIVET D3415-041 NUT PLATE IN PLACE

NOTE: MASK THREADS IN D3415-041  
PRIOR TO FINISH

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		CHECKED	APPROVED		SHEET 4 OF 4
		DATE		TITLE	SCALE
		06.12.19		SKIDTUBE ASSEMBLY	1:3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

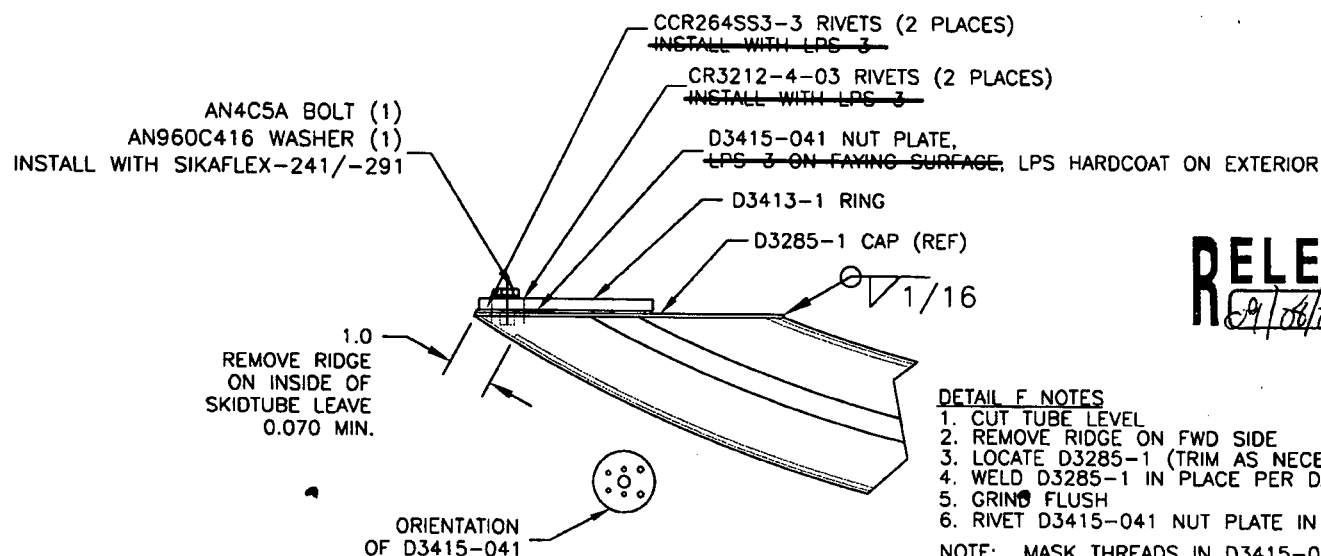
DRAWING NO. D3274	TITLE SKIDTUBE ASSEMBLY	REV. D	<b>DART AEROSPACE USA, INC</b>	D.E.O. NO. D3274-D-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>UP</i>	CHECKED <i>2</i>	MFG. APPR. <i>M</i>	APPROVED <i>MAP</i>	DE APPR. <i>#</i>		
DATE 09.06.17	DATE 09.06.23	DATE 09/06/23	DATE 09/06/23	DATE 09.06.23		

LPS-3 IS NO LONGER USED DURING ASSEMBLY OF SKIDTUBE.

AMEND NOTE 8: "~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES 'LPS 3' AFTER FINISH AND INSTALLATION OF INSERTS.~~  
COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES 'LPS PROCYON' AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF  
POWDER COATING WITH MEK DEGREASER."

AMEND DETAIL F AS SHOWN:

### DETAIL F: END FINISHING DETAIL



**RELEASED**  
09/06/23

#### DETAIL F NOTES

1. CUT TUBE LEVEL
2. REMOVE RIDGE ON FWD SIDE
3. LOCATE D3285-1 (TRIM AS NECESSARY)
4. WELD D3285-1 IN PLACE PER DART QSI 004
5. GRIND FLUSH
6. RIVET D3415-041 NUT PLATE IN PLACE

NOTE: MASK THREADS IN D3415-041  
PRIOR TO FINISH

*who could*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

NO. 235

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Berley Elliott  
Job number: 59780  
Part number: D206-642-541  
Description: 206 skid tube  
Welding Process: Tig~~[ ]~~ Mig~~[ ]~~  
Base material: Aluminium  
Current: AC~~[ ]~~ DC~~[ ]~~

TEST REQUIREMENTS AND RESULTS

Visual:  
Penetration:

pass~~[ ]~~ fail~~[ ]~~  
pass~~[ ]~~ fail~~[ ]~~

UNACCEPTABLE

Cracks:  
Undercut:  
Pin holes:  
Overlap (cold lap)  
Porosity (surface):  
Coloration:

pass~~[ ]~~ fail~~[ ]~~  
pass~~[ ]~~ fail~~[ ]~~  
pass~~[ ]~~ fail~~[ ]~~  
pass~~[ ]~~ fail~~[ ]~~  
pass~~[ ]~~ fail~~[ ]~~  
pass~~[ ]~~ fail~~[ ]~~

Qualifier [Signature]

Date of Test Coupon 10.07.01

Welder [Signature]

Date of Test Coupon 10.07.01

The above named individual is qualified in accordance with AWS D17.1.2001 to weld